WHAT IS CLAIMED IS:

1. A method for converting a signal to differing sample rates, comprising:

receiving, at a first sample rate, a plurality of data points, associated with a first signal;

operating on said plurality of data points to associate said signal with a predetermined set of parameters, with said set of parameters including a first transition band having an image corresponding thereto; and

varying said sample rate associated with said first signal by interpolation with an interpolator having associated therewith a second transition band, with the width associated with said second transition band being a function of a spectral separation of said first transition band and said image, wherein a second signal is produced having a sequence of data samples approximating the first signal.

2. The method recited in claim 1 wherein varying said sample rate includes producing each data sample associated with said second signal by convolving a predetermined finite number N of data points with an equal number of coefficients, with N being greater than two.

3. The method recited in claim 2 wherein coefficients vary as a function of the temporal spacing between the output point and the corresponding input points.

4. The method as recited in claim 1 wherein varying said sample rate increases said sample rate.

5. The method as recited in claim 1 wherein varying said sample rate decreases said sample rate.

6. The method as recited in claim 1 wherein operating on said plurality of data points includes up-sampling said plurality of data points by a factor of two.

7. The method as recited in claim 1 wherein operating on said plurality of data points includes filtering said plurality of data points with a half-band filter.

8. The method as recited in claim 1 wherein operating on said plurality of data points includes decimating said plurality of data points with a half-band decimator.

9. The method as recited in claim 6 further including decimating a plurality of data points output by said interpolator with a half-band decimator, with varying said sample rate occurring after receiving said plurality of data points and before decimating said plurality of data points.

10. The method as recited in claim 1 wherein operating on said plurality of data points to associate said signal includes filtering the same with a finite impulse response filter.

11. The method as recited in claim 1 wherein operating on said plurality of data points to associate said signal includes filtering the same with an infinite impulse response filter.

12. A method for converting a digital audio signal to a different sample rate, comprising:

receiving a plurality of data points, associated with an audio signal, at an initial sample rate;

halfband filtering said plurality of data points with a halfband filter; and

interpolating with an interpolator having independently programmable parameters.

13. The method as recited in claim 12 wherein:

said halfband filtering is done in conjunction with upsampling said plurality of data points; and

said interpolating follows said upsampling and halfband filtering.

14. The method as recited in claim 12 wherein:

said halfband filtering is done, without upsampling, on said plurality of datapoints; and

said interpolating follows said halfband filtering.

15. The method as recited in claim 12 wherein:

said halfband filtering follows said interpolating.

16. The method as recited in claim 12 wherein:

said halfband filtering is done in conjunction with upsampling said plurality of

data points;

said interpolating follows said halfband filtering; and

halfband filtering and decimating following said interpolating.

17. A computer program product for converting signals to differing sample rates comprising:

code for receiving a plurality of data points, associated with a signal, at a first sample rate;

code for operating on said plurality of data points to associate said signal with a predetermined set of parameters, with said set of parameters including a first transition band having a first width;

code for varying said sample rate associated with said first signal by interpolating a subset of data points of said plurality of data points with an interpolator having associated therewith a second transition band, with the width associated with said second transition band being a function of a spectral separation of said first transition band and said image, wherein a second signal is produced having a sequence of data samples approximating the first signal; and

a computer-readable storage medium for storing code.

18. The computer program product as recited in claim 17 wherein code for operating on said plurality of data points includes code for up-sampling said plurality of data points by a factor of two.

19. The computer program product as recited in claim 17 wherein code for operating on said plurality of data points includes code for filtering said plurality of data points with a half-band filter.

20. The computer program product as recited in claim 17 wherein code for operating on said plurality of data points includes code for decimating said plurality of data points with a half-band decimator.

21. The computer program product as recited in claim 18 further including code for decimating said plurality of data points with a half-band decimator.

22. The computer program product as recited in claim 17 wherein code for operating on said plurality of data points to associate said signal includes code for filtering

said data points with a filter selected from the set of filters consisting essentially of a finite impulse response filter and a infinite impulse response filter.

23. A computer program product for converting a digital audio signal to a different sample rate, comprising:

a computer-readable storage medium for storing code, said code including

code for receiving a plurality of data points, associated with an audio signal, at an initial sample rate;

code for halfband filtering said plurality of data points with a halfband filter; and

code for interpolating with an interpolator having independently programmable parameters.

24. The computer program product as recited in claim 23 wherein:

said code for halfband filtering is executable in conjunction with code for upsampling said plurality of data points; and

said code for interpolating is executable following said upsampling and halfband filtering code.

25. The computer program product as recited in claim 23 wherein:

said code for halfband filtering is executable, without upsampling code, on said plurality of datapoints; and

said code for interpolating is executable following said halfband filtering code.

26. The computer program product as recited in claim 23 wherein:

said code for halfband filtering is executable following said code for interpolating.

27. The computer program product as recited in claim 23 wherein:

said code for halfband filtering is executable in conjunction with code for upsampling said plurality of data points;

said code for interpolating is executable following said code for halfband filtering; and further comprising:

code for halfband filtering and decimating executable following said code for interpolating.

28. The method of claims 1 or 12 wherein said interpolator is an FIR Nth order sum of products interpolator with linear interpolation of coefficients.

29. The computer program product of claims 17 or 23 wherein said interpolator is an FIR Nth order sum of products interpolator with linear interpolation of coefficients.

30. The method of claims 1 or 12 wherein said interpolator has a transition band beginning adjacent the top of a passband and ending adjacent the bottom of a passband image.

31. The computer program product of claims 17 or 23 wherein said interpolator has a transition band beginning adjacent the top of a passband and ending adjacent the bottom of a passband image.

32. The method of claims 7, 8, 9 or 12 wherein said halfband filter is an IIR filter composed of first order allpass blocks.

33. The computer program product of claims 19 or 23 wherein said halfband filter is an IIR filter composed of first order allpass blocks.